



A.D. 1855 N° 2752.

S P E C I F I C A T I O N

OF

JOHANNES NEUENSCHWANDER.

PREPARING SWISS WHEY FROM MILK.

LONDON:

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Preparing Swiss Whey from Milk.

LETTERS PATENT to Johannes Neuenschwander, of the Canton of Bern, in Switzerland, and Proprietor of the Whey Establishment of Harvstehude, near Hamburg, for the Invention of “**CERTAIN IMPROVEMENTS IN THE PROCESS OF PREPARING WHAT IS CALLED ‘SWISS WHEY’ FROM MILK.**”

Sealed the 6th June 1856, and dated the 6th December 1855.

PROVISIONAL SPECIFICATION left by the said Johannes Neuenschwander at the Office of the Commissioners of Patents, with his Petition, on the 6th December 1855.

I, JOHANNES NEUENSCHWANDER, of the Canton of Bern, in Switzerland, and
5 Proprietor of the Whey Establishment of Harvstehude, near Hamburg, do hereby declare the nature of the said Invention for **CERTAIN IMPROVEMENTS IN THE PROCESS OF PREPARING WHAT IS CALLED “SWISS WHEY” FROM MILK**, to be as follows :—

In the preparation of this beverage for sanitary purposes, the milk is at first
10 converted into curds and whey, by mixing a small quantity of a liquor called “runnet” with it, which causes it to curdle. The curds are then separated from the whey, which at this stage is in German called “wattich” (a name which I intend to retain in the present description), and which is then a second time

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subjected to the process of curdling by the admixture of a liquor prepared from the wattich, and which I call "whey vinegar." The process of preparing the whey is then concluded in the manner well known to persons conversant with this subject. The whey vinegar is prepared as follows:—A certain quantity of the wattich is put into a vessel, which I prefer to be of wood, and allowed to stand for a fortnight in a temperature of about 14° R., during which time it will turn acid, and a sediment will form at the bottom of the vessel. The clear liquid above the sediment (the "whey vinegar") is then carefully drawn off.

One of my improvements consists in ascertaining the proportion of the vinegar necessary to effect the second curdling, by putting a small known quantity of the wattich into a wooden ladle, and adding thereto of the vinegar drop by drop, until the contents of the ladle again separate into curds and whey, the latter being perfectly transparent.

Another of my improvements consists in concentrating the whey thus prepared by subjecting it to evaporation during half an hour, which process causes it to keep fresh and sweet for much longer time than it would otherwise do. And in cases where the whey is intended to be sent to distant parts, it is drawn off into bottles, corked, and the corks well secured. These bottles are then placed up to their necks into cold water in a boiler, and the boiler placed over the fire, where it is allowed to boil for two hours, when the boiler is again removed from the fire, and the water and bottles allowed to stand and cool during half an hour. The whey contained in the bottles will then keep perfectly clear and sweet for months. The whey prepared in the manner above described has been highly approved of by some of the first physicians and practical chemists of Hamburg, Berlin, and Switzerland.

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SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said Johannes Neuenschwander in the Great Seal Patent Office on the 6th June 1856.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JOHANNES NEUENSCHWANDER, of the Canton of Bern, in Switzerland, and Proprietor of the Whey Establishment of Harvstehude, near Hamburg, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Sixth day of December, in the year of our Lord One thousand eight hundred and fifty-five, in the nineteenth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the

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said Johannes Neuenschwander, Her special licence that I, the said Johannes Neuenschwander, my executors, administrators, and assigns, or such others as I, the said Johannes Neuenschwander, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time
5 and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "CERTAIN IMPROVEMENTS IN THE PROCESS OF PREPARING WHAT IS CALLED 'SWISS WHEY' FROM MILK," upon the condition (amongst others) that
10 I, the said Johannes Neuenschwander, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and
15 immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said Johannes Neuenschwander, do hereby declare the nature of my said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement (that is to say):—

20 This Invention has for its object the preparation of whey from milk of greater purity and strength than the whey which has hitherto been made and used for medical purposes. The whey which is made according to my method will remain sweet and pure for a considerable length of time, and not turn acid or putrid, as is the case with whey prepared in the usual manner.

25 In order that my Invention may be clearly understood and readily carried into effect, I will proceed to describe the various processes which I employ in the preparation of the whey.

The runnet which I use for curdling the milk is prepared as follows:—One-third of the stomach of a calf and one tablespoonful of salt are put into a jar
30 with tepid water and allowed to stand during 12 hours, the liquor or runnet is then drawn off and ready for use.

The milk to be converted into whey is put into a copper and heated gently till it becomes tepid, when a small quantity of the runnet is added to and mixed with it, after which it is allowed to stand for 20 or 30 minutes, when it
35 will have curdled and become solid; it is then cut into pieces of about 4 inches square, with a wooden knife, whereupon the solid part or cheese will separate itself from the liquid. This mass is then slowly stirred up with an agitator until the solid part is reduced to pulp. The copper with its contents is now

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again placed on the fire, and kept at a temperature of about 30° Réaumur, until the cheese has attained the proper consistency, that is to say, till it forms easily into balls in the hand, during the whole of which time it is to be constantly agitated, so as to prevent its forming into lumps. The copper is then removed from the fire, and the agitation continued during half an hour, after 5 which the contents are allowed to settle during a quarter of an hour, whereupon the solid parts or curds are removed from the copper. The liquid which is left, and which I call "wattich," still contains a certain amount of cheese, which has to be separated from it by subjecting it to a second process of curdling. The acid which I use for this process, and which is called "whey vinegar," is 10 prepared from whey in the following manner:—A certain quantity of whey is put into a wooden vessel and allowed to stand till it becomes acid, when a sediment will form at the bottom, from which the clear liquid, the "whey vinegar," is drawn off. The degree of acidity best calculated for the second curdling is 5° of the acidometer. The wattich which has to undergo the 15 second process of curdling is now again placed over the fire, heated to the boiling point, and then removed from the fire and well agitated, and whilst still boiling, whey vinegar is added to it in the proportion of about 3 gallons of vinegar of 5° to 100 gallons of wattich; this mixture is then allowed to stand for 5 minutes, during which time the second curdling takes place. 20

Another mode of ascertaining the proportional quantity of vinegar necessary for curdling a certain quantity of wattich, when the degree of acidity of the vinegar is not known, is by putting a small known quantity of wattich into a wooden ladle, and then adding the vinegar drop by drop until the contents of the ladle separate into curds and whey, the latter being perfectly transparent. 25

The copper is now again placed over the fire, and the contents heated to the boiling point. These curds, which during the process of boiling rise to the surface, are then also removed, and the remaining liquid is what is known by the name of "Swiss whey." The whey thus prepared I then subject to the process of boiling during half an hour, when it is ready for use. If the whey 30 is intended to be kept for any time, or to be sent to distant parts, it is then bottled. These bottles are placed into water in a copper up to their necks and boiled for two hours, when the copper is again removed from the fire, and the bottles allowed to cool in the water for half an hour. Whey thus prepared will keep perfectly good for more than a year. The bottles may be corked 35 either before or after the process of boiling.

The whey prepared as above described has been highly approved of by some of the first physicians and analitical chemists of England, France, and Germany.

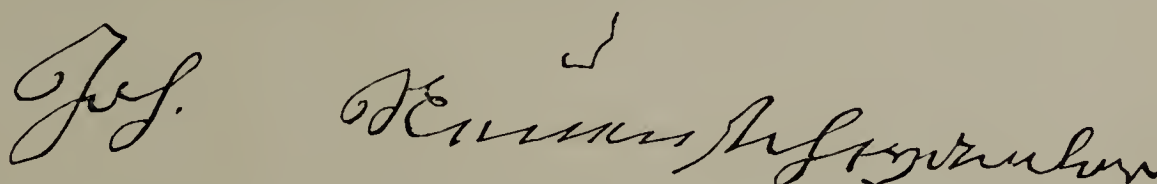
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Instead of using a copper for preparing the whey, and placing the same over the fire, and then removing it again, &c., as above described, a suitable vessel of a different description may be used in combination with any of the well-known gas, fire, or steam-heating apparatus.

5 What I claim as my Invention is, firstly, the boiling or concentrating of the whey after it has been cleared of the curds after the second process of curdling.

And, secondly, the boiling or concentrating of the whey when drawn off into corked or uncorked bottles or jars, as herein-before described, and I do not
10 claim any other part of the process or processes before described.

In witness whereof, I, the said Johannes Neuenschwander, have hereunto set my hand and seal, this Sixth day of June, in the year of our Lord One thousand eight hundred and fifty-six.

 (L.S.)

LONDON:

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